

What is claimed is:

- [c1] 1. A rings-based system, comprising:
a plurality of ring members on a ring network that communicate using point-to-point connectivity;
a message traversing the ring from member to member;
the system being adapted so that upon the message arriving at a given ring member the message is processed by that ring member if the message is applicable to that ring member, and if the message is not applicable to that ring member, the message is passed on to the next ring member; and
means for providing an external ring interface enables communication with at least one external peripheral device.
- [c2] 2. The system of claim 1, wherein the means comprises a field programmable gate array.
- [c3] 3. The system of claim 2, wherein the means further comprises a memory port ring member on the ring network.
- [c4] 4. The system of claim 1, wherein the means is adapted to perform handshaking between the protocols of the ring network and the at least one external peripheral device.
- [c5] 5. The system of claim 4, wherein the handshaking includes converting message data from the ring network into transaction data.
- [c6] 6. The system of claim 1, wherein the means allows the ring network to write out messages to the at least one external peripheral and the at least one external peripheral to generate transactions converted into messages for the ring network.
- [c7] 7. The system of claim 1, wherein the means operates as a shared memory between the ring network and the at least one external peripheral.
- [c8] 8. The system of claim 7, wherein the means includes a memory that operates as a RAM for messages received from the ring network and as a FIFO for transactions received from the at least one external peripheral device.

- [c9] 9.The system of claim 1, wherein the at least one external peripheral device includes one or more of a DSP, encryption engine, external bus, external memory, and a second ring network.
- [c10] 10.The system of claim 1, wherein the ring network is a first ring network on a first chip, and further comprising a second ring network on a second chip, and wherein the first ring network and the second ring network interface through the means to the at least one external peripheral device.
- [c11] 11.The system of claim 1, wherein the ring network is a first communications processor including a first protocol processor and a second network processor, and further comprising a second communication processor including a second protocol processor and a second network processor, and further wherein the first communications processor and the second communications processor interface through the means to the at least one external peripheral device.
- [c12] 12.The system of claim 1, wherein the means includes a memory, and wherein the ring network can write data to an address in the memory to cause an interrupt in the at least one external peripheral device.